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A Synthesis Of Research On Reading With Recommendations For Instruction In Georgia Schools

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INTRODUCTION

In this synthesis of selected research in reading, professors of reading at Georgia State University have prepared a document to be used in planning reading programs for Georgia schools. The review of research was undertaken to assist the Georgia Department of Education in identifying knowledge about reading and, based on findings and conclusions of the research, to state implications for reading instruction in Georgia schools. Typically, a time lag exists between the time research is reported and the time significant findings have an effect in school practices. Often, too, university and public school personnel have not established a system of mutual communications through which to disseminate research findings. This document is one attempt to bridge such gaps.

Reading is the most researched area of the curriculum. Yet, in spite of the vast amount of research conducted in this area, instruction is often not based on research findings. If programs are to have a sound conceptual base, they must be built on what is known about the reading process, existing good practices and programs and the characteristics and needs of the learners. Since the amount of research conducted on reading since 1900 is immense and since a considerable amount of research is not directly related to the learning and teaching of reading, this review of the literature is not intended to be an exhaustive one. Rather it reflects an attempt to identify significant research, and synthesize from a number of studies the relevant conclusions for instruction. There is danger in basing instructional programs solely on research findings since there are many important considerations in learning that are not amenable to quantification through research documentations.

The report is organized by levels such as readiness and beginning reading, elementary reading, middle and secondary reading. The greatest attention is given to the elementary level (including the readiness and beginning reading stages) since the amount of research investigations is greatest at the elementary level. At this level the topics of comprehension, instructional methods, reading vocabulary and word analysis are given special emphasis. There are sections on literature, reading attitudes and self-concept, on corrective and remedial reading and on the organization and administration of reading programs. The final part of the report consists of recommendations for Georgia schools.

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SUMMARY AND RECOMMENDATIONS

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RESEARCH ON ELEMENTARY READING

The elementary school level of this research review is organized by the topics of prereading and beginning reading, instructional methods, comprehension, vocabulary and word analysis. While reading interests, literary experiences, corrective and remedial instruction and administrative and organizational factors are extremely important at this level, these topics are considered so important at all levels that they are specifically treated in separate sections.

Prereading and Beginning Reading

The significance of the prereading and beginning reading stages can not be overestimated since the foundation established at these stages has an immense effect on future progress and attitudes. The research on prereading and beginning reading has focused largely on factors involved in readiness, the content of instructional programs, the age for learning to read and the evaluation of readiness.

Many factors have been investigated according to their influence on readiness for reading. Most of these investigations have been correlational studies, but it is often forgotten that in research correlation does not mean cause and effect. While investigations of the relationship of socioeconomic status, sex, intelligence, chronological age and mental age to success in beginning reading have been numerous, the focus on the findings of such studies may be detracted from/by the necessity of looking at features of instruction and matching the instruction to the child and to the demands of the task.

The direction in examining readiness factors in relation to beginning reading achievement has moved from studying the correlation of such factors noted above to looking instead at factors involved in the actual process of beginning reading.

Samuels (1973) reviewed much of the research and failure in beginning reading. Among his conclusions are that "...poor reading is associated with inferior visual memory" (p.221) and "The literature on auditory discrimination and reading leads one to conclude that in the absence of frank sensory impairment reading difficulty is probably not strongly associated with a lack of auditory discrimination." (pp. 232-233). Groff (1973) contends that there is "scant support to the notion that six-year-olds do not have enough auditory discrimination to learn phonics" (p. 35).

Letter-name knowledge is another factor which has been investigated in relationship to reading readiness. Although this factor is easily tested and has been found to correlate with beginning reading achievement (Bond and Dykstra, 1967) research also illustrates that direct instruction in letter names does not improve achievement in beginning reading (Ohnmacht, 1969; Samuels, 1972). Prereading and beginning reading programs will probably include some attention to letter names but false assumptions about the value of this instruction should be avoided. Researchers caution that children who learn letter names easily often possess other abilities and that letter-name knowledge itself is not the key factor.

Areas currently receiving attention are those of children's cognitive development and children's views of reading. From an investigation of research, Singer (1975) concluded that "the evidence clearly indicated that there is a relationship between conceptualization and learning to read" (p. 304). Elkind (1975) believes cognitive development is extremely significant in beginning reading and maintains that the cognitive competencies of children must be considered in the evaluation of readiness and in the selection of appropriate curricular experiences. He includes the reaching of the concrete operation stage as essential for success in beginning reading.

Downing (1969, 1976) conducted research on five and six year old children concepts about reading and has reported that they do not understand the concepts of word, letter, phrase, sound and sentence. He says the task of helping children move from prereading to beginning reading requires that children acquire the following: "(1) A **clear understanding** of the functions of literacy, and (2) a **clear understanding** of the technical processes involved in the written communication system" (1976 p. 12).

Preschool and readiness programs can offer experiences which provide an orientation to the purpose of printed language (seeing written language on their art work, experience stories and in other meaningful settings), opportunities to experience literature and a program designed to extend conceptual and language development. An excellent statement about reading and preschool programs is now available from the International Reading Association (1977).

Seaton and S. Smith (1977) investigated the effect of a two-year systematic language development program in kindergarten and first grade on children's reading ability. Evaluation at the end of kindergarten and first grade showed that a systematic language development program increased achievement in language, readiness, word knowledge, word analysis and reading comprehension. Cazden (1972), a renowned researcher in language development, strongly attests that children need a school environment which allows many opportunities for communication.

One question facing today's schools is the timing of both prereading instruction and of beginning reading. For many years since the research of Morphet and Washburne (1931) it was thought that first grade was the optimal time for beginning reading, particularly after children had attained a mental age of six and one-half or had demonstrated readiness by the score attained on a readiness test. Today, it is recognized that the time for a successful introduction to reading varies considerably. (Gates, 1937; Durkin, 1966, 1974-75). Durkin (1974-75) has conducted three studies of children who learned to read before grade one. In the first two studies reported in *Children Who Read Early* (1966) she noted that children who learned to read at home came from homes where they had been read to, where parents presented a reading model themselves and where someone had spent considerable time with the child. In her third study she reported on a program where instruction was offered—available but not forced—to children in a preschool program while they were four and five. She concluded that reading instruction can be provided, though not required for all children in preschool settings, but that the nature of the instruction and the total preschool curriculum must be one that is congruent with the needs of young children.

Although Durkin has convincingly shown that **some** children can and do learn to read earlier than first grade, she stresses the need for schools to consider very carefully the matter of reading in the kindergarten. Much reading instruction in kindergarten is often conducted for such wrong reasons as parental pressure or in response to the "teach it earlier" syndrome. Such instruction is often very narrow and is not designed to interest kindergarteners. Neither is it in accordance with how learning occurs for young children. That an essential if when reading instruction is offered in kindergarten is the condition that reading instruction throughout the school be individualized to build upon the earlier learning.

Based on her own and an analysis of other research, Durkin concludes "... since there is no guarantee that a kindergarten start in reading will lead to greater success in future years, no school should introduce reading instruction into its kindergartens unless that instruction can be of a kind that will add both enjoyment and greater self-esteem to the fifth year of a child's life" (1974-1975, pp. 59-60). She further states "... earlier starts in reading are meaningless if schools are unwilling to alter what is taught in the years that follow kindergarten" (p. 60).

Readiness tests are often relied on to evaluate a child's readiness for reading, although most reading authorities caution that the tests, if used, should be used only as one source of information and not as a final judgment. The studies of Barrett (1965) and Rude (1973) show convincingly that the content of readiness tests varies considerably from test to test. Rude (1973) also noted that some subtests tested abilities not supported by authorities as requisites for reading. The recommendations are that teachers be aware of what the tests actually do test, that they plan appropriate instruction and that test scores should not be used as the sole criterion of readiness.

Instructional Methods

A persistent question in reading instruction for many years has been "Which method is best?"

From 1920 to the late 1960's a large amount of research was focused on this question. Since Jeanne Chall's (1967) detailed review of the research on methods for beginning reading from 1910 to 1965, instructional methods have been classified as meaning-emphasis and code-emphasis approaches. The best known meaning-emphasis approaches are individualized reading, basal reading and language experience. The code-emphasis approaches include the linguistic approach, intensive phonics approaches and the revised alphabets. It now appears that factors other than method are more important in reading achievement. And that the comparison of Method A to Method B is no longer a worthwhile research topic. Research needs to investigate the particular outcomes (other than general achievement of a particular method) and to examine the effects of particular methods for particular characteristics of learners.

The largest research project in reading methods was the National First Grade Studies of the U. S. Office of Education which consisted of 27 projects throughout the country (Bond and Dykstra, 1967; Dykstra, 1968). The purpose of these 27 projects was to determine the effectiveness of various instructional methods for beginning reading. One widely quoted conclusion of the studies is the following.

"No one approach is so distinctly better in all situations and respects than the others that it should be considered the one best method and the one to be used exclusively." (Bond and Dykstra, 1967 p. 122).

Combination programs can increase reading achievement. Basal reading series are the most widely used materials for teaching reading in the elementary schools of this country. However, in many schools attention is given to other meaning-based programs such as individualized reading and the language experience approach. Both individualized reading (Vite, 1961) and language experience have been found to be effective in teaching reading (Hall, 1978). Hall reviewed the available research on language experience programs and concluded that language experience instruction is as effective as other methods in fostering reading achievement and is superior in spelling and creative writing. Impressive mastery of vocabulary was also demonstrated in some of the research reviewed.

Since there is no single method that will be appropriate for all children, and since combined programs produce better results than single approach programs, it is recommended that a combination of meaning-based approaches be used.

Recent research shows (Barr, 1974-75; Cohen, 1974-75) that different instructional approaches influence the actual reading strategies children use. Further investigation of the specific effects—not merely achievement comparisons of methods—of various instructional approaches is needed to determine which methods lead to the most effective strategies for promoting effective reading.

Currently, research on reading instruction focuses on the nature of the reading process and particularly on the psycholinguistic foundations and language processing. The instructional approach employed is of secondary concern. (F. Smith, 1971; 1975; K. Goodman, 1970).

Comprehension

Until about 1970 there was little research investigation of reading comprehension in comparison to the amount conducted on other dimensions of reading. This lack of investigation was thought to be unimportant but instead because the nature of comprehension is hard to define, to identify, to measure and to examine.

Golinkoff (1975-76) reviewed research in comprehension as she examined the differences in comprehension for good and poor readers. She concluded that good comprehenders have mastered decoding and that they are adaptable and flexible in their patterns of reading according to the

purpose for reading, while some poor comprehenders may often have inadequate language comprehension skills and may be weak in text organization. Both poor and good comprehenders could obtain meanings from single words; thus, comprehension difficulties cannot be remedied by focusing on single words since such a focus does not relate to the process of extracting information from print. "... The poor comprehender seems to read text in a word-by-word manner with a minimum of text organization. The poor comprehender is also generally inflexible to variations in task demands and seems to use a minimum-sized unit." (p. 655). Poor comprehension implies a failure to extract structure and organization from text.

Teacher questioning in reading has been explored by researchers. Guszak's (1969) study documented that the majority of questions asked by teachers are directed toward literal comprehension and that higher levels of comprehension are not given sufficient attention in reading instruction. Teachers are urged to ask questions which require various types of thinking. One frequently cited taxonomy of reading comprehension is Barrett's (Smith and Barrett, 1974, pp. 53-58) which consists of four levels: literal, inference, evaluation and appreciation. This description can be a guide for teachers as they strive to improve comprehension and as they strive to ask questions which require varied types and levels of thinking.

Research has documented that having readers (instead of teachers) set purposes for reading has a positive influence on reading comprehension and on increasing readers' active involvement in reading (Stauffer, 1975, Henderson, 1963).

A recent National Assessment of Educational Progress reports that one of the major needs in reading instruction is to improve comprehension. While many children can score adequately on measures of word recognition, reports of achievement in comprehension show that there are lacks in the area of comprehension. Aaron (1976) notes too that in recent years "achievement in decoding skills seems still to be climbing, whereas achievement in comprehension skills appears to be leveling off or falling slightly" (p. 6).

One caution in interpreting comprehension tests is related to the effect of passage dependency or "the extent to which questions used in the test could be answered without reading the passages on which those questions are based." (Tuinman, 1973-1974, p. 206). Tuinman's (1973-1974) research reported that the probability of students responding correctly to the comprehension items without having to read the passages on five widely used standardized reading tests ranged from .32 to .50. In addition to the passage dependency factor, teachers should be aware of other limitations of comprehension test such as the narrow field of the abilities tested on some tests and that critical and creative reading are often not tested.

There has been a recent surge of interest and research effort in the area of reading comprehension. However, much of the present work in comprehension is extremely theoretical, and at this point it is difficult to synthesize research with concentration on the classroom implications of teaching comprehension. However, it can be stated that present research in comprehension is directed toward following the structure of a passage as well as recognizing the author's purpose. The psycholinguistic influence on instructional methods noted in the preceding section is also evident in investigations of comprehension as the psycholinguistic influence on the interaction of thought and language in processing written language is basic to research in comprehension.

Vocabulary

Developing a reading vocabulary is one of the major concerns in a reading instructional program. Reading vocabulary is defined here as those words a reader can recognize, pronounce and understand immediately. This stock of words grows steadily as children progress in reading. The acquisition of a reading vocabulary is influenced by the amount of speaking and listening vocabulary a learner possesses, by experience and background, by the amount of exposure to oral language and by

independent reading. The studies cited in the literature section of this review support that literature experiences increase vocabulary.

One widely quoted study is Goodman's (1965) investigation and comparison of children's reading of words in isolation and in context. He concluded that children recognized more words in context than in isolation. Reading authorities stress that work with reading vocabulary learning should occur in context, not in isolation. Practice on isolated words is not recommended either for the introduction of new vocabulary or for repetition or mastery of other vocabulary items.

One issue concerned with teaching reading vocabulary is the significance of a controlled vocabulary. The vocabulary control in recent basal series is less rigid than it once was since today's materials reflect more natural language patterns than did earlier ones. Studies of individualized reading and of language experience reading (Hall, 1978) show that programs without a controlled vocabulary do still result in the acquisition of a reading vocabulary. Studies of the vocabulary used in children's and adult's reading and writing show considerable overlap with a number of words consistently appearing with high frequency. After investigation of a number of vocabulary lists, Harris and Jacobson (1974-75) observe that "The relative stability of the vocabulary used in elementary reading materials is worthy of note," (p. 106) and they also found a "high degree of agreement on which are the 2,000 commonest words," (p. 107).

Reading authorities appear to agree that attention to increasing children's listening, speaking and reading vocabularies should be a constant objective with attention given to selecting materials which enrich children's existing vocabularies without containing so much new vocabulary that reading becomes frustrating. Increasing vocabulary will be a concern in all content areas as well as in reading. Vocabulary teaching will occur not in lists but with the reading of appropriate material for meaning.

Word Analysis

Word analysis refers to those procedures used to analyze an unknown word encountered in reading. The commonly taught word analysis strategies are the use of sound-letter correspondences (phonics), structural or morphemic analysis of word parts and context cues, as well as use of the dictionary. Debate in reading has continued for many years on the usefulness of instruction in word analysis. Most reading authorities deplore the teaching of word analysis as an end in itself without application to real reading, yet most authorities would advocate some direct teaching of word analysis if such teaching is done with consideration of each word's relation to overall meaning.

Many of the generalizations taught in reading programs have been found to be of limited usefulness. The 1963 study of Clymer was the first of several to illustrate the lack of value of some phonics content. Since his study there has been a trend toward greater linguistic accuracy in the content of word analysis. Frank Smith (1977) notes "Phonic generalizations are both cumbersome and unreliable; over 200 rules with hundreds of exceptions apply to the most common words in our language. Relatively few words can be 'blended' from the sounds of their spelling" (p. 387). Instead of the distorted emphasis on decoding, teaching should be directed toward helping children bring meaning to print.

The teaching of syllabication rules has been criticized as being of little use in reading. Canney and Schreiner (1976-77) reviewed research and authoritative opinion on the teaching of syllabication and conducted a research study themselves. They reported that syllabication instruction did not result in improvement in either second grade children's word attack skills or reading comprehension. They concluded that the results "did not seem in any way to justify the amount of time, effort and emphasis afforded syllabication or phonogram pattern instruction" (p. 127).

For recommended identification of appropriate content we would recommend checking the content included in many of the reading methods textbooks such as Durkin (1974), Heilman (1977),

Lamb and Arnold (1976), R. Smith and Johnson (1976) and Stauffer (1975). We urge teachers not to overstress the word analysis component and to realize that **at all levels**, comprehension should receive greater emphasis than word analysis.

Summary

The recommendations for the elementary level focus on building a comprehensive reading program which helps students get a good start in reading by providing a solid prereading language and conceptual foundation, offering an enriched instructional program based not on a single approach but on a combination of the meaning-based approaches using a variety of materials and by stressing comprehension, vocabulary development and useful word analysis strategies in the instructional program. The significance of literature in the total reading and language arts experiences and the importance of attitudes and self-concept should also be stressed but were not mentioned since there is a section in the review which discusses these topics specifically.

RESEARCH ON MIDDLE SCHOOL READING

Attention to middle school reading has increased in recent years. This research is not as extensive as at the elementary level, but many of the concerns and conclusions about elementary reading will also apply at this level. In middle school reading instruction, comprehension, vocabulary, word analysis and motivation continue to be important, and content area reading and study strategies receive particular emphasis. Direct, systematic instruction in reading all too often ends when children leave the elementary school. Reading instruction is still important beyond the elementary level. In fact, the reading demands of middle and secondary schools are so heavy and so diverse that reading ability has an immense effect on both attitude and achievement. Studies on comprehension, reading-study strategies, content area reading, reading rate improvement, vocabulary and word analysis for middle school students are noted below.

Comprehension

Ways to improve the reading comprehension of students and the factors relating to reading comprehension have been the focus of much research. Some of the more recent research findings on developing comprehension in middle grade students are discussed here.

In a study concerning the effect of interest on the reading comprehension of good, average and poor readers of middle grade age, Vaughn (1975) determined that the effect of interest on comprehension differed across three ability groups. Comprehension of less able readers was more significantly affected by variance in their interest toward what they read than was the comprehension of better readers regardless of grade level. The implication is clear that if less able readers are to profit from practice in reading/comprehension, the materials they read should be selected with their reading interests in mind.

Peters (1975) investigated the effect of systematic restructuring of text material on reading comprehension. His hypothesis was that when a systematic strategy for presenting concepts is used, both good and poor readers show improvement in concept attainment. Three ninth grade groups read material developed around the Frayer concept model, and three read material presented by the usual textbook approach. Groups (with ability levels controlled) using material developed according to the Frayer model comprehended significantly better those concepts presented than did those groups using conventional textbook materials.

In another study Kulhavy and Swenson (1975) studied the effect of using imagery instructions with text material for instruction of fifth and sixth grade students. Image-instructed students were directed to form mental pictures of events and activities in each paragraph prior to responding to questions on each paragraph. Control students were told to read the material and answer the questions correctly. Immediate and delayed test results were secured. When delay scores were analyzed, learners who received imagery instructions still remembered and comprehended significantly more content than non-imagery instructed students.

Breneman (1975) investigated the relationship between linguistic awareness and reading comprehension among fourth, sixth and eighth graders. Linguistic awareness was assessed by two tests employing nonsense syllables which were developed by the author. Reading comprehension was measured by a three-paragraph, fifth-word deletion cloze test and by the reading subtest of the Metropolitan Achievement Test. Correlations were found between the scores on the testing instruments. The correlation of linguistic awareness and reading comprehension remained constant over the grades. The findings suggest that awareness of syntactic features of word order, function words and inflectional endings in meaningful language should be stimulated in the reading instructional program.

Edwards (1974) attempted to determine the effect of idioms on 256 eighth grade students' understanding of prose. Students were tested with one of four tests containing increasing amounts of idiomatic expression. The findings were highly significant in that they indicated that as the number of idiomatic expressions in a passage increased, comprehension of the passage decreased.

J. Cunningham (1976) also dealt with style as a variable in his investigation of the effect of metaphor on comprehension. His sixth grade level subjects read two passages which related the same events but differed in the amount of metaphorical language used. Comprehension was measured by means of a cloze test. Though both passage versions yielded identical readability estimates, cloze comprehension of the metaphorical passage was lower than the comprehension of the non-metaphorical version. Idiomatic and metaphorical language should, it appears, be considered in the selection and teaching of material for middle grade students.

Reading Study Strategies

Reading study strategies are a major concern in middle school reading. A study reported by Grant and Hall (1968) involving 279 sixth grade students investigated the effects of advanced organizers on reading comprehension. Experimental and control groups were divided into above average, average or below average readers according to the reading subtest of the Iowa Test of Basic Skills. An article appropriate for the average sixth grade pupil was selected. The experimental group was given a broad thought-directing question prior to reading while the control group was told only that they would be asked to answer questions after the reading. The results led the experimenters to conclude that (1) a broad thought-directing question may not contribute significantly to better reading comprehension if the material is of low level difficulty for a particular reader; (2) in general, a thought-directing question is of value in comprehending material near or at the instructional level of difficulty for the reader; and (3) when the material to be read is on the frustration level, a thought-directing question is of no value.

A more recent study by Maher (1975) was conducted with sixth grade children. There were two control groups and two experimental groups. Advanced organizers were presented in the form of interpretive objectives. Following the reading assignment, questions aimed at these objectives were given. Results indicated that significant improvements were made on the interpretive section of the California Reading Test.

A. Smith (1973) studied what effect training seventh grade students to generate their own questions prior to reading study materials had on reading. Students were taught elements in the type and classification of questions. Control subjects continued in the normal instructional program. All students took the Gates-MacGinitie Reading Test and informal tests of ability to generate reading questions as pre- and six-weeks post-treatment tests. Informal tests of the ability to generate pre-reading questions indicated that experimentals improved significantly more than controls, but there were no significant differences between experimentals and control subjects on pre- and post-test scores of the Gates-MacGinitie Test.

Gruber (1973) investigated the value of training junior high students in the use of the SQ3R reading study method. An instructional period and four practice sessions were built into the research design. At the conclusion of these sessions an evaluation instrument was administered. An accuracy level of 80 percent was required in order to have met the learning objective. Ninety percent of the students met this objective. Gruber concluded that students had learned to use the SQ3R reading study method and that it had facilitated their reading more effectively.

Content Area Reading

Closely tied to concern with study strategies is the topic of content area reading. Reed (1968) examined the effect of the study of syntax and paragraph structure on the content area reading comprehension of monolingual and bilingual seventh grade students. Approximately 50 percent of the students in both the experimental and control groups were bilingual. Experimental groups used study sheets twice weekly which had been devised according to the following criteria.

- (1) Goals should be stated and models used in each lesson.
- (2) Sentence units and main ideas should be stressed.

- (3) Local places, people and events should be used in the reading material as often as possible.
- (4) Material from the social studies and science texts should be used.
- (5) Attention should be directed to punctuation as an aid to deriving intended meaning.
- (6) Practice for writing as a counterpart of reading should be provided.
- (7) Use of library and reference skills should be encouraged.
- (8) Goals and examples of varied syntax should be repeated frequently.

All experimental groups performed significantly better in terms of gain scores on content area paragraph reading comprehension.

Dodd (1974) studied the effects of different content materials on the reading comprehension of eighth grade students. Students were pretested on the Gates-MacGinitie Reading Test and grouped as above average, average and below average readers. Passages read were selected from science, social studies and literature texts not in general use in the school. Cloze tests based on an every fifth word deletion pattern were administered in a group setting. Findings showed differences in comprehension due to subject matter. Students dealt more effectively with grade level literature texts than with science or social studies texts. This was true of all groups but particularly true of the above average group. J. Cohen's (1975) examination of the effects of content area materials on cloze test performance suggested findings in contradiction of these, however. Cohen studied the effect of content from seventh grade literature, social studies and science texts on cloze test performance. Texts used in the study were not used in classroom instruction, but the Dale-Chall readability formula suggested that they were of comparable difficulty to the texts used. Testing over several days indicated that social studies materials was the easiest and literature the most difficult material for students.

These two studies suggest a variance within and between subject areas in the difficulty level of content area reading texts. More research is needed in this area. A determination of the readability of specific content area texts being used in the classrooms of middle grade students is indicated.

Reading Rate Improvement

Improvement of reading rate, while not stressed at the elementary level, receives some attention at the middle school level. Swalm and Kling (1973) conducted research on speed reading with fifth and sixth grades. The effects of timed reading drills and free reading on reading rate and comprehension were examined. Children in the timed reading group received motivated rate drill three times a week for a 10 week period. Children in the free reading group were given equivalent amounts of reading time. The post-test scores favored the rate training group on reading rate improvement, but on a standardized test of comprehension the results showed a slight but significant increase in favor of the free reading group. The timed group also showed a real loss of comprehension, significant to the .01 level. The implication that reading rate should not be stressed to the point that comprehension suffers was clear.

Corman (1973) also observed the effect of rapid reading instruction on the reading comprehension of middle grade students. Results indicated that the reading rate of fifth graders improved significantly. Comprehension of fifth and seventh graders did not increase significantly. The implication that perhaps reading rate can be increased without loss of comprehension was drawn, yet rate training did not improve comprehension.

Vocabulary Development

Vocabulary knowledge has been shown to influence reading comprehension, but individual words have meaning only as they relate to other words and to ideas being expressed. Research generally has shown that being exposed to new words incidentally or through direct instruction helps increase students' vocabularies but that vocabularies grow more rapidly when at least some planned vocabu-

lary instruction is provided and when students use words they are learning in their spoken and written discourse, and thus discover ways in which those words communicate meaning.

Tuinman and Brady (1974) investigated the impact of direct vocabulary instruction on middle grade students' reading comprehension test results. Words taught were words in the test known to be unfamiliar to the students. Results indicated that scores on vocabulary tests improved, but that the increased word knowledge had little effect on reading comprehension test scores as then measured.

From a model of learning as a generative process, Wittrock, et. al. (1975) hypothesized that familiar stories, in contrast to unfamiliar stories, facilitated middle grade students' generation of meaning for low-frequency, undefined words. Across three levels of reading ability, three stories and tests, four schools and two modes of presentation, the hypothesis was supported. Familiar stories facilitated the learning and retention of new vocabulary words.

Research by Hammack (1971) compared the direct-teaching, the interest-in-words and the wide-reading approaches to expanding vocabulary of middle grade age students. Two separate tests used, the Diagnostic Reading Test and the Nelson-Denny Reading Test, however, yielded contradictory findings. Hammack concluded that weaknesses in instruments available for measuring vocabulary growth made legitimate analysis of the effects of vocabulary instruction at best tenuous.

Word Analysis

Although the bulk of word analysis instruction occurs during the first three grades, some attention is given to improving proficiency in reading through refinement of word analysis strategies in the middle school. A study at the research and Development Center for Cognitive Learning (1975) examined children's pronunciation of words and word frequency and meaningfulness as an effect of word discrimination. Two groups of sixth graders were presented high frequency words, low frequency/high meaningfulness words and low frequency/low meaningfulness words. The accuracy of the subjects' judgments of word meaning showed that pronunciation increased accuracy of word discrimination in low frequency/highly meaningful words, that pronunciation of high frequency words is superfluous to providing meaning because recognition is spontaneous and that pronunciation by the student of low frequency/low meaningfulness words does not help in providing word meaning.

The major purpose of a study by Smiley, Pasquale and Chandler (1976) was to identify factors distinguishing the word pronunciations of good and poor readers. Seventh grade students from the top and bottom of their class were asked to pronounce a list of 96 words. Results indicated that the most important factor affecting successful pronunciation was word familiarity and the good readers were familiar with more words than poor readers. Moreover, good readers made significantly fewer errors not only on familiar but also on unfamiliar real words and on synthetic words with which neither group was familiar.

Conclusions to be drawn from the above research are that prior meaningfulness to the student strongly influences whether converting a word into sound assists him or her in ascertaining its meaning, and that familiarity with words in print helps the reader deal not only with familiar but also with unfamiliar and synthetic words in print. It may be that emphasizing language and vocabulary development and providing low achieving readers with an abundance of materials on their reading level as well as practice time for reading may be more fruitful for middle grade students than practice on word analysis content.

Regarding the use of context clues in the analysis of words in print, Robertson (1968) researched middle grade students' use of connectives, the linguistic form for connecting a clause to another clause or to some word in it. Findings indicated that use of connective as contextual clues rose steadily throughout grades four, five and six. An implication is that reading teachers should support this development but not presume that middle grade students have the ability to make use of this type of context clue.

Summary

The research on middle school reading supports the significance of meaning in reading and shows that interest, structure of materials, imagery and language awareness affect comprehension. Focus on reading study strategies can facilitate comprehension. There is considerable variance in the readability of materials in various content areas, and the readability factor needs to be considered by teachers when selecting instructional materials. Reading rate may be increased, but should not be stressed to the detriment of comprehension as rate improvement does not lead to improvement of comprehension. Vocabulary knowledge can be extended, and both selected direct teaching with meaningful material and wide reading can contribute to vocabulary extension. Word analysis receives less attention in the middle school than at lower levels.

The research reviewed here shows that when word analysis strategies are effective the meaningfulness of words is significantly increased.

RESEARCH ON SECONDARY READING

The majority of the research reports on secondary reading is in the category of investigating the effect of instructional procedures and programs. Also included in this review are studies about content areas, readability and a statement of need in secondary reading programs. Implications for instruction are included with the description of the studies reviewed.

Instructional Procedures and Programs

Grandgenett (1976) explored whether an individualized reading lab program, System One Individualized Reading Lab Program, for 150 students, sixth through twelfth graders, would affect their reading achievement. He found that achievement tended to increase in relationship to a number of factors.

- (1) Objectives mastered tended to increase as grade level and favorable attitudes toward the reading lab increased but decreased as instructional time increased.
- (2) Books read increased as attitude toward reading and reading lab, self-directedness and instructional time increased but decreased as grade level increased.
- (3) Girls tended to complete more objectives than boys.

This study seems to imply that effective high school reading programs might provide for individualized lab situations. Conditions for higher reading achievement will be enhanced if objectives are clearly stated so that students understand and direct their own learning. Reading may also improve if students are provided an opportunity to read many books, especially if a positive attitude toward reading and the reading lab is encouraged. Instructional time in such a lab should be scheduled carefully to promote positive attitudes and reading of books, but with an eye toward attaining certain objectives. Older students and boys seem to have more difficulty attaining objectives; therefore, lab teachers should perhaps provide extra counsel to these pupils.

At the 1975 IRA convention Berryman (1975) reported on research on the use of a newspaper to promote reading skills in secondary pupils in rural Georgia. After 10 weeks of classroom instruction, results indicated improvement in reading achievement with all but the lowest level pupils. Although replication is needed and specific programs designed for individual schools, this research implies support for introducing the newspaper into high school classrooms as a teaching tool.

Ninth and eleventh graders in Texas high schools were introduced to literature through one of these methods — silent reading, solo performance and reader's theater (1975). After 10 days, retention and appreciation were tested. Maberry (1975) found that reader's theater resulted in less comprehension loss and awakened a higher appreciation for reading literature than did the other two approaches. Implied is that reader's theater is an innovative technique which aids reading comprehension and should be considered as one means for teaching reading at the secondary level.

Schnell and Rocchio (1974) reported on an experiment they conducted with high school students in which information was underlined (by instructors or students) prior to students' reading. This technique resulted in increased recall — both immediate and delayed. Implied is that reading comprehension can be improved when high school instructors take time to note with students the important information they will be reading, preferably by providing an underlined copy and encouraging students to use this technique in their reading.

A study was conducted to determine the changes in cognitive understanding of and affective responses to poetry (Snider, 1975). A poetry unit based on behavioral objectives obtained from teachers and pupils was taught to two ninth grade English classes. Snider (1975) reported that learning and response to poetry, as measured by attainment of the objectives, was significant at the .05 level on every level of the cognitive and affective categories designated within the program. This action study implies that when teachers and pupils help develop their program and realize what their objectives for learning are, they may achieve high levels of comprehension.

Culver (1975) experimented with a guided reading procedure for ninth, tenth and eleventh graders who scored below the sixtieth percentile on the Gates MacGinitie Reading Comprehension test. His purpose was to determine the effectiveness of guided reading in improving the comprehension skills of unaided recall, organizing information and attitude, all thought to be highly related to instructional methodology. The 20-hour program was taught by two teachers who alternated the instruction, each with half the class half the time. Findings indicated that comprehension improved in all three skills. Only unaided recall was significantly improved as a function of the guided reading procedure. This study reinforces other studies which conclude that probably no particular methodology is superior to another. Guided reading, because it leads pupils toward careful attention to comprehension, may produce more spontaneous recall for poorer readers.

To ascertain if compensatory programs could have an effect on self concept, level of aspiration and academic achievement of students from low income families, McCormick and Williams (1974) tested 152 high schoolers enrolled in Upward Bound. Significant improvement was found in each area. Of particular note is that reality of aspiration level improved. Often, the aspirations of poor readers are unrealistic and thus they may "give up." Realistic aspiration levels might result in improved progress in smaller increments over a short term. This study provides important implications for continuing compensatory programs, especially if they begin as early as possible.

Klumb and Otto (1977) described the development of a reading program designed to meet the reading needs of post-elementary students in Duluth, Minnesota. "The Design for Reading: Secondary" was the program followed. While data are not yet available on the impact of the program, their position that the failure of many students to attain functional reading ability by the time of high school graduation can be "largely attributable to a lack of focus in the goals set for secondary reading programs and to a general insensitivity of such programs to the realities of the organizations of secondary schools and to the priorities of secondary school teachers" (p. 59) is worthy of note.

Content Area Reading

Many of the research reports reviewed at the secondary level addressed the effect of reading programs in content areas. The following citations are of content area procedures.

Thompson (1973) hypothesized that students would comprehend literature at an interpretive level better if they received explanation and written practice exercises in interpreting plot, character, theme, figurative language and tone. He selected at random 72 students from four ninth grade classes for a sample which included pupils of high, middle and low reading achievement. The control group received class discussions on themes common to nine short stories and one novel. The experimental group received instruction in explanations, written practice and class discussion on interpreting plot, character, figurative language, tone and theme. Classes were taught by two teachers and the experimenter so that each group received instruction equally from all three teachers for a six-week period. Post-testing indicated that neither instructional method was superior, but one teacher could be identified as achieving superior results with student ability to interpret literature in both her experimental and control groups. Implicit here is the importance of the teacher variable, which is illustrated time and again in the professional literature.

In "Model Lessons For Reading in the Content Areas" Housfeld (1976) described the development by a reading specialist of 15 model lessons which were integrated with content area textbooks. Lessons were formulated for science, social studies and business education with the cooperation of the teachers of those subjects in a high school. The teachers taught the lessons, then rated them. Students also rated the lessons. Teachers responded positively. Students rated the materials at the second highest rating level which suggests they valued the lessons, although some must not have been as useful to them as others. Housfeld (1976) identifies the implications of the program as the following.

- (1) Secondary content textbooks can be used to teach reading skills.
- (2) If commercial materials are used, students need help to transfer reading skills to the content.
- (3) In-service with teachers will facilitate this transfer.
- (4) Students need feedback about their reading abilities in content areas.

Boles and Smith (1975) tested the effect of a vocation-related reading program on improving students' reading ability. They used eleventh and twelfth grade males enrolled in vocational studies. The experimental group received a career-related reading program throughout their course. No significant difference in reading scores was found. However, the cost difference of this experimental program was one fifth that of the traditional program. If the cost of a reading-related vocational program is less than that of programs now in operation, and a reading emphasis is applied carefully in the less expensive course, secondary schools might want to consider this option for designing future courses.

An eleventh grade core program was designed to improve reading skills of high school juniors and to encourage positive attitudes toward racial and ethnic differences (Van Voorhees and Scoblette, 1975). English and social studies classes of two types were used. One class was comprised of poor readers and one of good but unmotivated readers. The groups were not to be compared with each other. Instead the emphasis of the study was placed on the program. The unmotivated readers received one period of instruction in social studies and one in English four days a week. The poor readers worked with the reading specialist for the same amount of time. Since multilevel textbooks were used, reading material for varying reading levels was provided. Post-testing showed that 60 percent of all the students improved significantly in reading and that the most gains were made by those students who were already better readers. Responses to a questionnaire indicated that attitudes toward reading improved and that racial tensions decreased. Integration of a reading emphasis with a values emphasis which social content can provide may contribute to reading and attitude improvement in secondary students.

Harris and P. am (1972) designed a program to improve study habits of high school students. Their subjects were high school students enrolled in a summer session of English and geometry classes. The majority of subjects were non-volunteers, which probably affected the results. Grades were used as the indicator of the success of the program. Non-volunteers tended not to have a higher grade point average than non-participants. Thus, it appears this program was not effective. The implication of this study has less to do with the program attempting to develop effective study habits than it does with changing attitudes. A non-volunteer summer school is an unlikely environment for improving attitudes.

Bragstad (1975) researched the effect of a four-week study course on techniques for how to learn. The experimental group was a geometry class of 25 students. A control group of 25 students was also used. Reading materials emphasized "how" rather than "what" to learn. She found that the experimental group produced significantly more ideas and better grades than the control group. Implied is that developmental reading instruction in secondary content areas will produce results if geared to the "how" of learning.

Readability

Some research studies reviewed dealt with readability considerations for secondary students. There has been growing awareness of the difficulty level of many instructional materials for secondary students. Bryant (1971) sought to determine if there were differences between the readability levels of content area textbooks and the reading levels of tenth, eleventh and twelfth graders in several Florida high schools. She found that there were real differences. More than half the students studied had been assigned content textbooks which were more difficult than their tested reading level.

Keenan (1976) investigated a similar topic by determining the minimal reading ability needed by

75 percent or more tenth graders in two large Florida high schools. She found the minimal level needed to comprehend the English and science texts was twelfth grade and to comprehend the social studies text was eleventh grade.

A study of the readability of textbooks was conducted by Galloway (1973). Using textbooks secondary teachers had selected and taught from, Galloway prepared cloze exercises. Literature proved to be the most difficult area. The results indicated that all of the textbooks were too difficult for use with non-college bound students.

The implications of the above studies are clear. Reliance on publishers' criteria is not always an adequate measure for readability. Teachers need more training in concepts and measurement of readability. Publishers, of course, need to report readability more accurately.

Some studies have focused on instructional strategies to decrease readability problems. Kaplan and Rothkopf (1974) in two related experiments had 216 high school students read instructional materials of varying passage lengths for which specific or general objectives were supplied for each passage read. They found that use of objectives increased performance, that mastery of objectives decreased as number of objectives increased, that incidental learning was less with longer passages and that specifically stated objectives provided for more learning. For instructing secondary students, it appears that material will become more readable if teachers prepare their students with specific reading-learning objectives but are sensitive to keeping the objectives and passage lengths reasonable.

Evans (1972-1973) selected 24 seniors reading at seventh to ninth grade level and had them read simplified and non-simplified prose passages using a cloze test format. He found that poorer readers can raise their comprehension scores through use of simplified passages. However, he cautions that much literature when simplified loses its meaning. An instructional technique implied might be simplification or instruction on how to paraphrase and understand complex language.

Summary

An article by Early (1973) is an authoritative discussion of the status of secondary reading programs. Because the article is not a research study, it was not reviewed earlier. However, Early's recommendations for secondary reading are extremely pertinent and are listed below.

1. Since elementary schools are sending us better readers, we must focus at secondary levels on study skills and higher thought processes. The goal is to turn good readers into good students.
2. We should welcome elective courses and modular scheduling as a framework within which we can develop mature reading and study skills.
3. We must rekindle interest in books — hardbacks as well as paperbacks. The intellectually elite must learn a love for books that record the past as well as forecast the future.
4. We must avoid two extremes — either losing a skills emphasis altogether in a "let 'em read" atmosphere, or — just as bad — overemphasizing mechanistic approaches that confound testing and teaching.
5. We should take advantage of schemes that permit staff development within the school day. In a related effort at teacher education, we must join the movement toward teachers' centers. Teacher certification is likely to become a local effort in the future. We should keep strongly in the new picture.

6. We must rethink the role of the reading coordinator, contracting when necessary to meet restricted budgets, expanding into "staff development leaders" and "learning consultants" where we can.
7. Finally, in an era when open education will undoubtedly lead to excess, we must risk the unpopular role of guardian of the middle way (pp. 372-373).

The combined evidence of the preceding research reports seems to indicate a number of important instructional considerations. There is a need for reading instruction at the secondary level. Techniques such as reader's theater, underlining or noting important information in content texts for students, providing specific objectives for reading of material and integrating reading skills teaching within content areas should be considered in developing secondary programs. As noted in the section on correction and remediation, remedial instruction for secondary readers will be more effective the earlier students are identified and aided. Use of functional materials, rewriting of difficult materials and more consideration of the readability of materials at the secondary level should be considered. As noted in the section on literature and attitudes, secondary students have defined reading interests. These should be used in aiding their reading growth. Improving self concept and recognition of affective variables which influence both achievement and attitude should be considered in planning appropriate instruction at the secondary levels. Students who feel good about themselves and their reading progress will achieve more growth than those who have a poor self concept.

RESEARCH ON CORRECTIVE AND REMEDIAL READING

Although teachers today are better trained than in the past, although reading materials are available in abundance and although a large amount of research has been conducted to investigate the efficacy of various methods, approaches or techniques in teaching children to read — and are presumably incorporated in the classroom routine — many children fail to learn to read well.

Extent of Reading Problems

Estimates of the extent of reading disabilities range from eight to 15 percent (Betts, 1957) to a more recent figure of 15 percent (Report of the National Advisory Committee on Dyslexia and Related Reading Disorders, 1969). Of course, how reading disability is defined affects the figure used in the estimate of extent of disability. In a recent publication it was suggested that a large number of the American populace, although perhaps not "disabled" in the traditional sense, reflects more realistically the severity of illiteracy. Cook (1977) states that there are approximately 39 million people, age 14 or older, who do not have a ninth grade education that is necessary to meet the functional reading needs of the 1970's. As the Committee on Dyslexia and Related Reading Disorders has pointed out, "... the 15 percent figure... is well beyond the range to be expected on the basis of normal human variability" (1969, pp. 22-23).

It should be recognized that regardless of the exact percentage or number of persons with reading disabilities, if children who are — or appear to be — capable of learning do not learn to read, then corrective or remedial instruction of some sort is needed. And indeed, over the last 75 years, theories on the causes of reading disabilities and their corrective/remedial practices implied by these various theories have proliferated. Moreover, as theoretical propositions have waxed and waned from a rational perspective, so, too, has the empirical perspective affected both theory and practice.

It is the purpose of the discussion below to review selected research on corrective and remedial reading with the studies reviewed being those directed toward the instructional aspects of correction and remediation rather than to the theoretical and etiologic aspects of this area of reading. Thus, the problem(s) of defining or identifying causal factors in disability will be dealt with only indirectly. Also, the relationship between learning disability and reading disability, although of considerable contemporary concern, will be dealt with only insofar as it is implied by the research reviewed — with one exception. It is with that exception that this section of the review begins.

Identification of Reading Disabilities

Satz (1977), in a comprehensive discussion of the problems associated with disability, points out that "the area of learning disabilities is truly a controversial and muddy domain" (p. 55). Satz argues that present definitions used in identifying and classifying learning disabilities, including reading difficulties, are vague, ambiguous, overlapping and confounded by implicit references to unknown and unobservable psychological-intellectual factors.

Reading disorders are lumped together with speech, language, perception, cognition, spelling, memory and writing disorders, giving rise in many cases to inadequate or inappropriate instructional activities as well as continued compounding of the problems evidenced by children. Difficulties in identification and classification of disorders are reduced to the practical problem of what should be done, by whom and how.

Corrective/Remedial Techniques

Related to the problem of appropriate identification and classification are the problems associated with corrective/remedial techniques. Hartman and Hartman (1973) examined the differing approaches to correction/remediation typically used by learning disability trained specialists and reading specialists. Differences were found to exist in both diagnostic and remedial methods. The LD specialist seeks to uncover the appropriate learning process disability, while the reading special-

ist deals more directly with the reading task. Research reviewed raises questions of the efficacy of perceptual training when compared to traditional remedial reading techniques with the suggested conclusion that although the results are somewhat inconclusive, such "process" training appears unsupported.

The use of perceptual training techniques in remediating reading difficulties appears to be supported to some extent by research such as that of Coleman (1968). Coleman tested the hypothesis that children who are deficient in language arts have a correlated deviation in visual and visual-perceptual development. However, children were identified as language arts deficient, then assessed for visual deficits rather than vice versa. One cannot assume either causation or prediction from correlational data such as this.

In a study by Belmont, et al. (1973),

... two match groups of beginning readers with equivalent degrees of risk for reading failure were provided, respectively, with supplementary perceptual training or remedial instruction using letters and words, in addition to receiving regular first grade classroom instruction. After seven months of supplementary instruction, both groups had made equivalent advances in reading level, indicating that neither perceptual training nor remedial reading was the superior program.

While Belmont, et al. (1973) compared perceptual training with traditional remedial reading techniques, Scriven, Shairo and Shaprio (1973) examined the effectiveness of three remediation techniques on the language arts and arithmetic achievement of high-risk (in terms of LD) first grade children. Remedial techniques consisted of DISTAR, a modified Kephart procedure and DISTAR plus perceptual motor training. Few differences on several measures of language arts (including reading) and arithmetic were found to exist among the experimental groups. Differences were found in word endings, arithmetic (Metropolitan Achievement Test), handwriting, gross motor tasks, locomotor balance and hand-eye coordination tasks, favoring, however, no one method in all cases.

In a study by Silberberg, Iverson and Goins (1973), differences in reading achievement at the end of a one-year period of treatment were found but in a later follow-up (six months) the earlier results did not appear to have been maintained. Evidence was insufficient to positively conclude that any one method had any greater long-term effects than any other or that any of the methods had demonstrable long-term effects on reading achievement.

Based on the assumptions that no consistent, scientific or general methodologies exist and that a more intuitive than systematic rationale is used for any particular method or combination of methods, Newman (1972) examined the effects of perceptual and phonics methods on the reading achievement of 80 eight- to 12-year-olds with a mean IQ of approximately 86. Although differences were found favoring the perceptual program over the phonics program on an oral reading test, these results were not repeated on a standardized reading achievement test. Newman also examined the effects of these programs by age and intelligence under the supposition that younger children and/or more intelligent children would profit from the perceptual program. The perceptual training program did not, however, produce significantly greater achievement for either more intelligent or younger children than the phonics program.

Hammill, Goodman and Wiederholt (1974) reviewed the literature on the efficacy of training programs in visual-motor processes and reported a study of their own. The relative usefulness of the Frostig-Horne and the Kephart-Getman perceptual training techniques is challenged. Methodological problems, among other problems, suggest the efficacy of reported results may be spurious especially with regard to reading achievement.

Hammill and Larsen (1974) reviewed 33 studies to examine the relationship of measures of auditory discrimination, auditory memory, blending and auditory-visual integration with results suggesting

that auditory skills as measured in the various studies are not sufficiently related to reading ability to be useful in school instructional practice.

Relatedly, Hare (1977) found visual-perceptual differences among achieving second graders. Discussing her findings, she suggests that such perceptual deficiencies cannot be used as indicators of reading problems.

As Harris concluded after reviewing the years since 1968 in terms of when emphasis was placed on learning disabilities during training in these underlying psychological processes (visual perception, etc.) that unfortunately "the accumulating evidence fails to show any direct payoff in growth in such areas as reading" (p. 30). Nevertheless, as witnessed by the currency of some of the studies mentioned above and the proliferation of visual-perceptual (and the like) classroom materials, direct payoff or not, such training appears to be an on-going instructional orientation on the part of many remedial specialists.

Other approaches to the correction of reading difficulties include programs based on a modified alphabet (*ita*) (Lane, 1974; Rampp and Covington, 1972), tracing (Vandever and Neville, 1972-73), counseling (McCollum and Anderson, 1974) and the typewriter (Fuhr, 1972). Rampp and Covington assumed the traditional phonic approach to reading was chaotic to children with auditory perceptual differences due to the inconsistencies of written English in terms of phoneme-grapheme relationships. Ten children with auditory perceptual difficulties were trained over a four-week program to read in *ita*. Although the subjects read better after training than before, serious methodological problems exist in this research, thus suggesting further analysis of *ita* in perceptual and reading programs. Lane's work involved 14 subjects over a 100-school-day period and employed *ita* for 40 minutes per day. Significant differences were found in pre- and post test results, but this research also suffers methodological problems, not the least of which is the halo effect. Further, no control group was employed.

Vandever and Neville examined the effects of visual, auditory and tracing cues on learning. Good and poor decoders were assigned to groups of 10. Training consisted of stressing visual cues, auditory cues and tracing cues. Results suggest first graders with well-developed decoding skills were less dependent on the cue emphasized while those with less well-developed decoding skills found the use of tracing cues more difficult than visual or auditory cues.

McCollum and Anderson (1974) report on the effectiveness of group counseling on vocabulary and sentence comprehension skills among 10- to 14-year-olds diagnosed as having minimal brain dysfunction and/or a learning disability. Following 10 weeks of group counseling sessions, experimental subjects demonstrated increases in vocabulary — both oral and silent — but did not show increases in sentence comprehension.

Fuhr (1972) investigated the effects of remedial reading, typing and a combination of remedial reading and typing treatments on the reading abilities of high school students two or more years below grade level. The results suggested that typing may be helpful in increasing reading achievement.

Problems in the Literature on Corrective/Remedial Reading

It should be obvious, even from the limited number of studies described above, that correction/remediation of reading and learning disabilities has been approached from many points of view with no clear pattern of success or of failure of program or approach emerging. Although, on the one hand, the literature reviewed may be considered representative, no exclusion/inclusion criteria were used to select studies by, as examples, age, extent of disability, nature of disability or nature of educational setting. Consequently, study versus study results using (e.g.) similar populations in similar settings are not put forth. Nor would such results be forthcoming if it were possible to make such study-by-study comparisons.

There are two reasons for the lack of a clear pattern. First, there is a major problem in the area of reading and learning disabilities in identifying the syndrome of reading or learning disability. (The relationship between LD and remedial reading efforts instructionally has been mentioned above, but this is a much more insidious problem than simply who is to be responsible for instruction). The second major problem causing the lack of a pattern, and thus, perhaps, prescription, is the question of **any** program having any lasting effect. This is a particularly salient concern with regard to short term — as many of the studies above consist of — treatment.

Satz (1977) details this first concern in his chapter in a recent text on remedial reading. Among his conclusion, it is suggested that the relatively loose terminology replete with surplus meaning currently used is a major problem leading to unknown, inferred and possibly false etiologies.

The second of these two concerns focuses on the impact of the remedial instruction. Pessimistic reports are presented by Balow (1965) and Silberberg and Silberberg (1969). Fieldler (1972) reports positive changes in attitudes toward and tastes in reading among a group of high school remedial readers surveyed when they entered a clinic situation and again when they graduated. Muehl and Forell (1973-74), studying 43 disabled readers in a follow-up to an earlier study, found that early diagnosis of reading disability was related to later reading performance even though the findings showed no evidence that clinic instruction following diagnosis significantly affected reading performance.

Gay designed a study to determine the relationship between student participation in a secondary school reading program and selected school performance variables. Stated questions were as follows.

- (1) Are students' reading achievement gains from a remedial reading program during sophomore year retained throughout high school?
- (2) Does participation in a secondary remedial reading program affect general school-related behavior?
- (3) What benefits do students perceive of such a program?
- (4) What recommendations could be made to the school where this study was conducted?

An experimental group of 49 sophomores received individualized remedial reading based on individual diagnosis. Treatment was one hour per day in classes of 10 to 15 students. Thirty-four received instruction for a year while 15 received instruction for nine or more weeks. The control group consisted of 49 students matched with the experimental students in sex, grade, reading achievement and non-verbal IQ. Remedial instruction did not significantly affect students' reading achievement when measured in grade 12. Participating a whole year rather than nine weeks made no difference. The remedial instruction did not affect school-related behavior, although remedial students with the highest gains had more positive attitudes toward reading in twelfth grade. In response to a questionnaire, the experimental students felt that the previous instruction had improved their reading ability but that it didn't affect their success in school. This research, although disturbing, supports other research which shows that short-term remediation does not produce significant long-term effects on objective measures of reading. However, the affective and more subjective component may be affected but is not easily measurable.

Conclusions

This review may suggest to some readers a rather dismal future for corrective or remedial instruction, especially as often conceived and conducted for the severely disabled. A major problem exists, however, if this assumption is accepted — namely, that any effort to assist disabled readers is fruitless. This is most dangerous and untenable. Remedial reading teachers and special education teachers are convinced that at least some of their efforts are helpful.

One reason no clear pattern of success is reported for research in corrective or remedial instruction is that for the most part researchers have been dealing with groups rather than individuals, assuming

more homogeneity than perhaps exists. Individualization of instruction, while a guiding principle for all education, is an even more necessary principle in adequately conceiving and appropriately conducting instruction for reading disabled students. However, within group research, there is a tendency for individual growth to go somewhat undetected — subsumed in group means, etc. Individualization, in a sense, thus works against results being readily evident.

Another reason corrective or remedial instruction appears ineffective is related to the duration of treatment. Too many short-term efforts with applied treatment which assumes homogeneity of disability, in comparison with the number of long-term efforts, have been conducted. As Satz (1977) points out, there is little regard for the necessary longitudinal research based on theoretical frameworks. And, related to long-term or longitudinal research, one must consider, as Satz also points out, the problems of identification and classification of disability. Too often children are inadequately and inappropriately diagnosed and placed in unsuitable educational environments. Such misdiagnosis results from an inadequate theory or framework for distinguishing disability variables and their precursors. Indeed, as Weiner and Cromer (1967) have pointed out, and as virtually every text on corrective or remedial reading has attested, reading disability results in most cases from a multiplicity of interrelated and interacting factors and not a single homogeneous factor. All remedial readers do **not** need the same instruction at the same time for the same duration in the same sequence. As Klasen (1972) concluded after reviewing some 500 clinic cases, remedial readers are characterized by "a heterogeneous syndrome of associated disorders consisting of various physiological and social components."

In light of the research reviewed, the following specific recommendations for instruction in remedial reading are made.

1. Wholesale use of perceptual training programs should be avoided. While such training may be appropriate for only a very few children, children in remedial classes should be provided opportunities to apply reading to real reading situations with real reading purposes.
2. Diagnosis and remediation should be conducted by personnel trained in reading.
3. Instructionally, an eclectic approach should be used rather than either one set of activities for all remedial students or one approach — linguistics, phonics, etc.
4. Corrective or remedial programs must be based on adequate and appropriate diagnosis which, in turn, is made according to sound diagnostic principles. Such diagnosis should subsequently lead to unique remedial instruction for each individual.
5. Last, all school personnel should be familiar with the goals and with the activities of the remedial program so that gains made by participating students will be reinforced in the classroom and students who are in need of remedial help will be properly referred.

Recommendations like those few listed above may be further understood by referring to any one of a number of texts on remedial reading. Among these texts are Bond and Tinker (1973), Otto, McMenemy and Smith (1973), Otto, Peters and Peters (1977), Spache (1977a) and Spache (1977b).

RESEARCH ON LITERATURE, ATTITUDES AND SELF-CONCEPT

Offering literary experiences, developing positive attitudes toward reading and encouraging interest in reading for pleasure are components of good reading programs at all levels. However, in many schools and classrooms, attention to reading for pleasure may be slighted in the effort to stress developmental reading instruction. There is research evidence to show that attention to literary experiences can enhance reading achievement, attitudes and language growth. There is also evidence to support the belief that consideration of students' interests in instructional programs can enhance achievement. The contribution of literature and the affective factors of attitude, interest and self-concept deserve attention in instructional programs.

Literature and Reading

The value of literature in enriching language backgrounds is supported by the research of C. Chomsky (1972). In a study of children's linguistic development she found that for children who had been read to and/or who read independently, the stage of linguistic development was higher than for children who had not had the exposure to literature. Fasick (1973) reported that literary materials for preschoolers use a far wider range of syntactic patterns than do children's television programs. She advocates the use of literature in developing children's language readiness for reading.

Strickland (1973) reported on the results of a program in children's literature to increase the ability of linguistically different, Black, kindergarten children to include standard English in their language repertoires. A program of activities such as creative dramatics, choral speaking, puppetry and role-playing following the listening to literature proved to be a successful method of expanding the language repertoire of the children in the study.

Factors that have an effect on children's reading are the availability of materials and opportunities to experience literature in a variety of ways. Lamme's (1976) three-year study of the reading habits of intermediate grade students indicated that the school library was the most important source of reading material. School library resources are essential for an effective reading program. Hall (1971) reported that interesting library corners and creative experiences with books were lacking in a majority of classrooms surveyed.

Attitudes, Interest and Reading

Alexander and Filler (1976) reported that achievement, self-concept, parents and the home environment, the teacher and classroom environment, instructional practices and special programs, sex, tested intelligence, socio-economic status and student interests are significant factors in determining attitudes. In their review Alexander and Filler (1976) conclude, "Attention to attitude development and maintenance is important to all levels" (p. 6). They also noted that "certain instructional practices and special programs can, but do not necessarily lead to improved attitudes" (p. 16). They note too that attitudes and behavior of parents and teachers may affect attitudes toward reading.

Leeds' (1974) investigation of research on reading interests shows that although children's interests differ from level to level and from individual to individual, children do have defined interests and opinions. Children's interests can be used to facilitate learning in reading.

Murdock and Phelps (1973) sought to determine how adolescents related to mass media and how it might affect the school situation through a survey of one hundred English secondary students and teachers. They found that adolescents from all social classes were interested in pop culture and that students actively choose and evaluate the kinds of programs, magazines and records they see, hear and read. Choices were related to school experiences, social class and neighborhood environment. Those most committed to school also did more reading.

A *New York Times* survey of 7,000 secondary and intermediate schools to determine teenage reading habits revealed a wide variety of tastes (1974). Twenty-four percent were interested in the occult; 11 percent in problems of the 70's; 10 percent in advanced literature; and the interest of 55 percent of those surveyed fell into 13 other categories. The fictional novel was the most popular genre. Since adolescents do seem to be selective about their choices involving media and book selection, secondary teachers might use these choices to good advantage in teaching relevant units which build on reading ability through interests.

Rossman (1974) sought to determine whether high school readers remembered their parents reading to them. Rossman speculated that imaginative reading and successful comprehension might be related to pictures parents created when reading to their young children, now secondary students. She distributed a questionnaire to 261 students asking about their interests, favorite movies, TV personalities, use of free time, magazine and newspaper preferences, if parents had read to them and if they read to younger siblings. Disturbingly, about one third of the responses to use of free time and interests reflected apathy. One hundred thirty responded that parents had not read to them. Only 44 could remember having been read children's literature. Students who listed a good book recently also remembered that their parents had read to them. The students already targeted as remedial readers were ones who, on the questionnaire, had difficulty listing books or responding to creative questions such as favorite persons, possible careers and use of free time, etc. Of great interest is the fact that 169 of the 261 students responded that they read to their siblings. Instruction should be geared to promoting interests and encouraging personal reading.

Vaughn (1975) investigated the effect of interest on reading comprehension for fourth, sixth, eighth and eleventh graders. He reported that the comprehension of better readers was less affected by interest considerations than for poorer readers but that highly interesting materials did have a favorable effect on the comprehension of poorer readers. Attention to interest appears quite important in planning instruction for poor readers.

Self-Concept and Reading

Children's concepts of themselves and attitudes toward reading affect reading achievement. Athey (1976) noted that "the research literature suggests that good readers tend to have more positive self-concepts than poor readers" (p. 357). Efforts to increase reading achievement should give attention to affective factors as well as to instructional considerations. Rowell (1973) studied the relationship between attitude change toward reading and achievement in selected reading skills of 40 children in grades four to eight in a corrective reading program. He found that as achievement increased so did changes showing a more positive attitude toward reading. The implication appears to be that schools should provide positive experiences in an accepting environment during reading. Athey (1976) maintains that affective, attitudinal and personality factors shown to be related to reading are susceptible to intervention both by researchers and teachers.

A study by Waller, Trismen and Wilder (1977) investigated the attitudes toward self and toward reading of poor readers involved in compensatory programs in 263 schools throughout the country. They found that students in special reading programs tended to have higher attitude gains than those not in compensatory programs.

Summary

Artley's (1975) survey of 100 junior and senior college education majors provides an effective summation to this report. He asked three questions dealing with memories of pleasant reading situations in elementary school. Teachers reading to students was the most enjoyable reading experience. The free time provided for personal reading was also a very positive influence as were the variety of activities teachers shared to promote reading.

"Stimulation for reading grew out of the sheer fun of experiencing an abundance of good things

to read" (p. 27). Participants commented on personal attention received and being allowed to motivate themselves. If Georgia schools provide motivating materials and activities and provide a positive atmosphere with emphasis on the effective area of reading, attitudes and performance in reading should improve.

RESEARCH ON ADMINISTRATION AND ORGANIZATION OF READING PROGRAMS

Administrative and organizational considerations in reading are directed toward creating and maintaining appropriate learning conditions in all aspects of reading development. Of special concern in the administration and organization of reading programs are classroom and school grouping arrangements, characteristics of effective schools and effective reading programs, parental involvement and both preservice and inservice teacher education.

Grouping Practices

Much research has focused on types of grouping both within and between classes. It can not be unequivocally stated that a single organizational pattern has proved best. However, some studies do show that certain practices appear best for promoting favorable attitudes toward school and self. Tuckman, Cochran and Travers (1973) reported that students in open classrooms had more positive self images and attitudes toward school than students in traditional classrooms although no differences in achievement (including reading) were reported. Brody (1970) reported that first and second year students in ungraded schools performed better on standardized tests than students in graded programs. Brody (1970) observed that the high ability students were permitted to progress according to ability. Morris, Proger and Morrell (1971) also reported better achievement in ungraded schools than in graded schools for above average students. McLoughlin (1970) studied the percentage of failures in graded and ungraded schools and found a lower failure rate in the ungraded schools.

Ability grouping involves students within the class, within the same grade level or across grade levels in an attempt to limit the range of individual differences within a group of students. Bennett and Ogletree (1972) studied the effects of homogeneous and heterogeneous ability grouping on the reading achievement of 18 slow learners at the first grade level. The experiment involved a total of 27 students placed in two matched groups with nine students classified as slow learners in each group. Both groups were taught reading one hour per day in self contained classrooms. Tests results indicated no significant differences in reading achievement. The author concluded that ability grouping does not affect reading achievement.

Butner (1974) also compared homogeneous grouping to heterogeneous grouping. She studied the self concept and school attitude of third grade low achievers grouped according to ability.

Results of the post-test indicated that ability grouping alone does not promote a more positive self concept for low achievers. However, there were some indications that homogeneous grouping does appear to have a positive influence on students' attitude toward school.

Nichols (1968) conducted a study to determine if interclass grouping for reading instruction has a positive effect on reading achievement in grades one and two. Interclass grouping did not show any benefit for below average students and the superior group did not advance to the degree that was predicted. The author concluded that the study does not support ability grouping.

Newport (1967) studied the Joplin Plan which is an interclass ability grouping plan for reading instruction. Students were grouped across grade levels according to ability as measured by standardized tests and teacher judgment. Newport points out that evaluating the effectiveness of interclass ability grouping is difficult because opinions and research differ greatly.

Another plan of school organization that permits ability grouping is described by Warner (1967). The divided day plan is an attempt to individualize instruction and allow more time for reading instruction. This plan provides for a reading period of one hour in the morning with half the class. The other half of the class arrives later and stays later for reading instruction after the first half goes home. This plan reduces the pupil-teacher ratio. In an experiment at the first grade level, the divided day plan was compared to half day and regular day organization. Scores on reading tests were compared and the findings indicated that the divided day group scored higher than the regular day and half day groups. It was also found that lower class students did better with more

teacher assistance. The author concluded that the divided day plan offers advantages to students and teachers.

Student's social adjustment and achievement in reading and language at the fourth and sixth grade levels in a team teaching situation were compared in a study described by Cooper and Sterns (1973) with those of students in a self contained classroom. A sample of 203 students were matched in terms of mental maturity, socio-economic level and achievement. Reading achievement test results were compared and there were no significant differences between the two groups. However, the results of a socio-graph indicated a significant difference in feelings of rejection of the students in the team situation. The author concluded that the problems of socially maladjusted students may be grater in a team teaching situation than in a self contained classroom.

Petrie (1973) studied the effect that organizational structure has on the interaction processes between teacher and student in the classroom. The difference in the amount of student-teacher interaction in schools with team teaching situations and nonteamed schools was observed. Results of the study indicated significant differences in pupil-teacher interaction. The author concluded that the team teaching organizational structure provides the type of pupil-teacher interaction which supports the developmental growth that builds individual ego strength.

Sartain (1968) commented on the tendency of schools to adopt an organization practice or pattern "because of a single obvious strength without consideration of possible adverse effects on the pupils or upon the curriculum" (p. 197). As a result, organizational structures adopted in some schools often have created as many problems as they have solved.

Promotion and Retention

Promotion and retention are concerns of adminsitrators, teachers, parents and students. Jackson (1975) reported that the annual direct cost of grade retention for the nation as a whole was roughly estimated between 739 and 903 million dollars during the 1971-72 school year. Inflation has certainly increased that amount. Jackson (1975) reviewed the available research on retention and reported that no study indicated generally beneficial effects of grade retention. Chansky (1964) also provided evidence that at the elementary and secondary levels grade retention does not seem to produce desired results academically or socially. Jackson unequivocally concludes that "... there is no reliable body of evidence to indicate that grade retention is more beneficial than grade promotion for students with serious academic or adjustment difficulties. . . . Thus those educators who retain pupils in a grade do so without valid research evidence to indicate that such treatment will provide greater benefits to students with academic or adjustment difficulties than will promotion to the next grade" (p. 627).

Characteristics of Effective Reading Programs

Venezky comments that "... often reading success or reading failure is a property of an entire school and not a single classroom." He notes, "... more and more studies are finding that the general quality of schooling which a particular building imparts determines to a large degree how well reading is taught in that school." Venezky (1977) summarizes recent research on school practices which influence reading success and reading failure. He identified major characteristics of successful schools. Those characteristics are (1) strong leadership for reading improvement (from principal or specialist), (2) high expectations for their children (true for inner city schools as well as others), (3) a good atmosphere, (4) a strong emphasis on reading, (5) presence of extra personnel to help with reading, (6) high degree of individualization (defined as adjustment of instruction to individual needs-not total one-to-one instruction), (7) careful assessment of student program and (8) long term efforts to improve reading (usually three to nine years to implement the programs) (p. 28-30).

A study of Samuels and Edwall (1976) reports findings similar to those listed by Venezky (1977). The five characteristics of successful reading programs were strong administrative leadership, staff cooperation and involvement in planning a coordinated reading program, a success atmosphere, expenditures for personnel and a carefully structured program.

In another study of effectiveness of schooling, Cane and Smithers (1971) investigated factors involved in successful and unsuccessful British infant schools and reported that the major difference was the lack of systematic instruction in the unsuccessful schools.

Parents and Reading

The immense significance of parents in influencing children's success in school is being recognized presently. Wise and Newman (1975) noted that a survey of parents and teachers of 2,150 students showed that parents want realistic, factual descriptions of student development. Parents also want information about specific strengths, weaknesses, areas for improvement and suggestions for helping their children. McWilliams and P. Cunningham (1976) report parents will help their children and will help their children and will actively support parent involvement projects when given definite information about how to help.

Some studies have investigated parental influence on reading achievement. Koppenhaver (1974) reported that "home environment" and "opportunities provided for an emphasis upon verbal development" appeared to influence achievement while I. Q. or sex did not. Kifer (1977) points out that studies of home background and reading usually consider status variables such as parent's occupation and education but that the crucial matters are process variables which indicate what parents **do** to support and encourage children. He lists the process variables in a supportive home as a rich verbal environment, support and concern for school-related tasks and activities and home educational experiences that are congruent with the expectations of the school. He states that the research evidence "makes it clear that only an extraordinary child can cope effectively with the demands of schooling without the support and concerns of parents" (p.13).

Bigler (1974) devised guidelines and activities for parents using "household literature" to help 20 secondary students reading one to three grades below placement improve their reading skills. Results indicated that household materials and guidelines can be developed to improve reading skills and that parents can use such guidelines. Communication from parents and teachers indicated that student ability and attitudes toward reading improved. This study has implications for much needed involvement of parents at the secondary level as well as for use of practical content in remedial reading lessons.

Teacher Education

Teacher education—both preservice and inservice—is of immense importance in improving reading instruction. A study of preservice programs reported that 89 percent of colleges and universities throughout the country are requiring at least one course in the teaching of reading for early childhood and elementary majors while at the secondary level, 80 percent do not require a reading course (Roeder, Beal and Eller, 1973). However, a reading course is often required for English and social studies majors. Educators now strongly recommend (Austin, 1973) a minimum of two courses in reading (a methods course and a course on classroom diagnosis and correction) for early childhood and elementary majors and a minimum of one reading course for all secondary majors.

The present situation is an improvement over the time Austin and Morrison (1973) reported that over half of the elementary teachers had never had a course in teaching of reading. Today's reading preservice courses usually include field experiences in classroom settings. Cooperation between colleges and universities is essential in the development of effective preservice education of teachers.

Inservice education is one means for improving teachers' competency and thus improving instruc-

tion. Effective inservice education requires the combined efforts of teachers, administrators, reading specialists and university professors.

A rural high school instituted a program of inservice and included seven features in the implementation. They were (1) selection of an appropriate reading consultant; (2) enlistment of principal support; (3) securing degree credit from an institution of higher learning; (4) scheduling of the inservice for convenient times and optimal teacher attention; (5) organization for small group and individual faculty work; (6) demonstrations to illustrate work; and (7) selection of staff members to act as helpers. The formal evaluation of this inservice program indicated that most of the faculty completed the course and 85 percent of them tried the techniques in their classrooms. The implications of this evaluation are fairly obvious. Inservice education will be better received if organized to meet staff needs and if provision is made for application of inservice work in classroom settings (Morgan and Kahsar, 1977).

G. Hall and Rutherford (1976) investigated the problems of understanding change in school settings. They found that individuals' concerns with change need to be addressed in the implementation of new programs. Otto and Erickson (1973) discuss the planning and implementation of inservice education as well as describe some model programs. In each case they stress the long range nature of effective programs as well as plans to meet the needs of a particular school or school district.

Summary

There is no single organizational pattern in a classroom or throughout a school that will ensure reading success. Retention and homogeneous grouping have not proved to be satisfactory answers for providing optimum learning environments. Instead, the total program needs to be considered, strong leadership needs to be present, parental support should be enlisted and quality preservice and inservice teacher education is a necessity.

SUMMARY AND RECOMMENDATIONS

Research in reading has been extensive—particularly during the last 50 years. From our review of selected research reading we are convinced that effective reading instruction can and does occur, but we are also convinced that the development and implementation of effective reading programs requires the effort of many individuals and the consideration of many factors. There is no simple or single answer for implementing good reading instruction.

We would like to stress the following recommendations for the development of effective reading instruction in Georgia schools. These recommendations stem from the research review but also reflect our interpretation of what is needed for good reading programs.

1. Pre-first grade programs should offer developmentally appropriate experience for furthering children's linguistic and cognitive development. Appropriate preschool language experiences do not require highly structured commercial programs but instead should provide language-rich environments with opportunities for intellectual growth.

2. The decision about the time for beginning reading should be an individual one instead of being an arbitrary one for kindergarten and first grade children.

3. The evaluation of readiness should be based on a number of factors. Readiness tests **must not** be used as the sole criterion of readiness or of group placement.

4. Comprehension should be the central focus in reading instruction. This focus should be characteristic at all levels and for beginners and remedial students as well as others.

5. Word analysis content should be revised to include only content that is useful, and word analysis instruction should not be divorced from meaning.

6. Literature experiences should be stressed at all levels. Students should have access to literature in classroom and school libraries, should hear literature read aloud and should be involved in varied language arts activities based on literature.

7. Developing students' reading interests and encouraging personal reading needs to be given great attention. A goal of reading instruction should be to produce readers—people who not only **can** read but who **do** read.

8. School reading programs must use a variety of methods and materials. If the decision is made to use basals, several series should be available in each school and other methods should be used for enrichment. Teachers should have a variety of materials available.

9. Planned reading programs need to be a part of the middle and secondary schools as well as the elementary level.

10. Students should be **taught** how to read in the content areas and how to use a variety of study strategies.

11. Reading instruction should be closely related to the total language arts program. In schools where there are reading and language arts instructional blocks or time periods, the time for the total language arts and reading program needs to be greater than is customary when reading is treated as a single subject.

12. Help should be available for readers needing special diagnosis and corrective/remedial instruction. The resources available in corrective/remedial instruction should include the services of a reading specialist or teacher to assist the classroom teachers in working with problem readers in a classroom setting.

13. Methods for evaluating reading achievement and reading programs should be broadened to include more than test scores. Instruction should be planned on more than test scores.

14. Schools should seek parental involvement to support the efforts of the school and to assist children's learning and to develop positive attitudes.

15. Leadership in each school is necessary to coordinate and implement an effective and systematic program.

16. Organizational plans should be based on multiple considerations and should be planned by a total school faculty.

17. There should be positions in school systems for special reading teachers, reading specialists and reading coordinators who have graduate degrees in reading education. These people can be instrumental in the development and implementation of reading programs.

18. Preservice education should include a minimum of two courses in the teaching of reading (one on methods and materials, one on classroom diagnosis and remediation) for prospective early childhood, elementary and middle school teachers and a minimum of one course in teaching reading for secondary teachers. The preservice education for early childhood and elementary teachers should also include course work in language arts and children's literature. The preservice education in the teaching of reading should include supervised field experiences in classrooms.

19. Inservice education in reading should be a continuing effort of all school systems. Such inservice needs to be long-range, based on worthwhile objectives and perceived by teachers as pertinent to their needs.

In conclusion, it is possible to offer excellent reading instruction for Georgia students. If the above recommendations are heeded, the school experiences for Georgia students will be improved.

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